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SUBSYSTEM SIX - SHORE-BASED ASW TACTICAL FORECAST/DISPLAY UNIT.--ETC(U)
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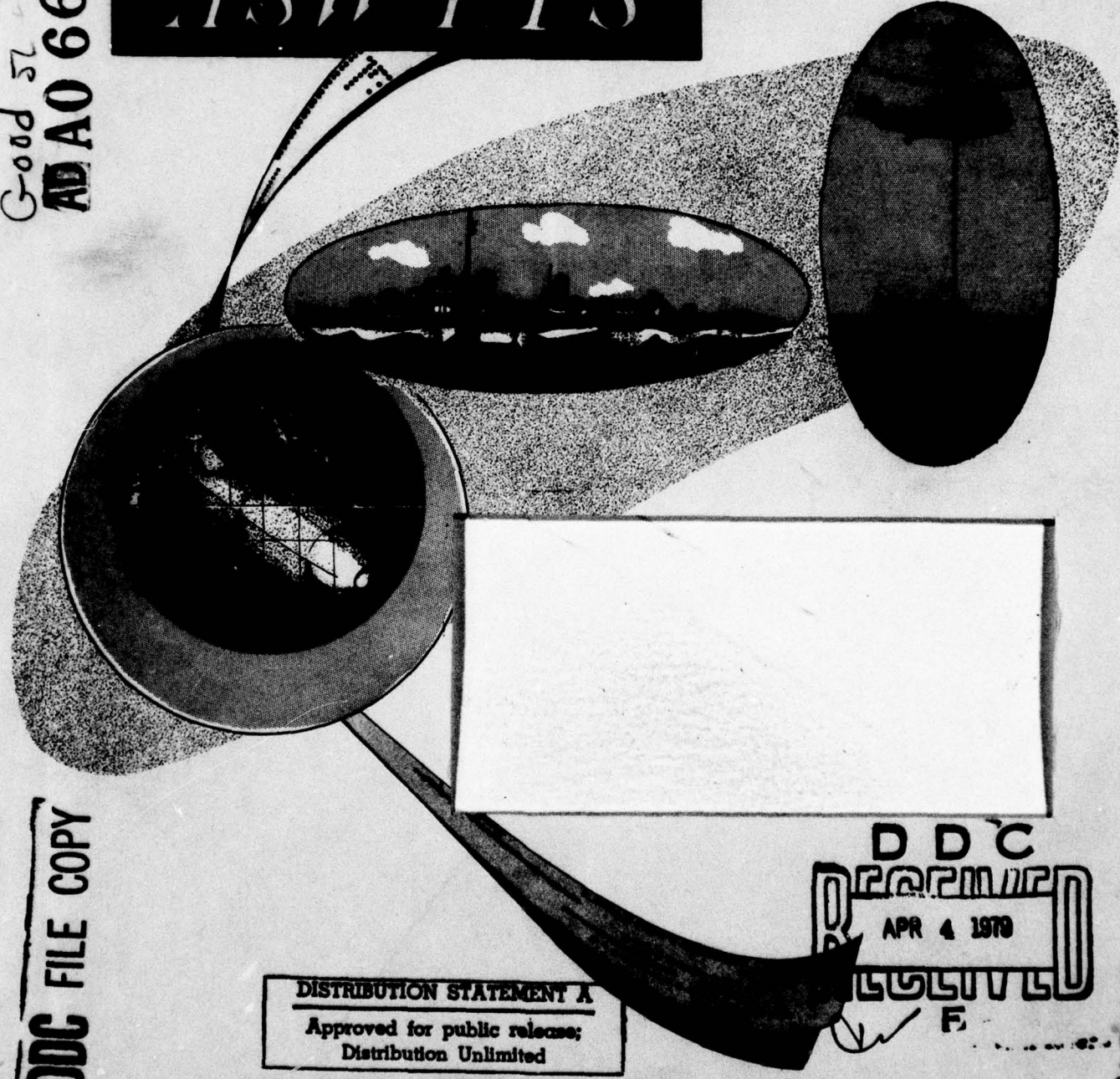
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SUBSYSTEM SIX -
SHORE-BASED ASW TACTICAL
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SUBSYSTEM SEVEN -
SEA-BASED ASW TACTICAL
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ALTHOUGH PERSONNEL RESEARCH MEMORANDA
IN THE AREA OF NEW WEAPONS AND SUPPORT
SYSTEMS CONTAIN THE BEST AVAILABLE
PRELIMINARY INFORMATION, SOME REVISIONS
MAY BE REQUIRED AS THE TECHNICAL DE-
VELOPMENT OF THE SYSTEMS PROGRESSES.

THE CONCLUSIONS AND RECOMMENDATIONS
ADVANCED ARE FOR INFORMATION PURPOSES.
POLICY CONSIDERATIONS AS WELL AS PLANNING
FACTORS ARE APPLIED PRIOR TO IMPLEMENTATION.
THEREFORE, THESE ARE NOT TO BE CONSIDERED
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SUMMARY

2 A. BRIEF

This report contains preliminary estimates of manpower requirements, duty specifications, and training requirements for personnel to be assigned to the Shore-Based ASW Tactical Forecast/Display Unit (Subsystem Six) and the Sea-Based ASW Tactical Forecast/Display Unit (Subsystem Seven) of ASWEPS. The information presented in this report has been developed through analysis and evaluation of pertinent technical data and interviews with personnel of the U.S. Navy Hydrographic Office, The U. S. Naval Weather Service, and the Bureau of Naval Personnel.

B. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Subsystem Six and Seven of ASWEPS will require the establishment of new billets at a selected weather facility located on shore and aboard the aircraft carriers participating in the Service Test of ASWEPS.
2. No new ratings, Navy Officer Billet Classification Codes, or Navy Enlisted Classification Codes are required for personnel in Subsystems Six and Seven.

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3. The functions of Subsystems Six and Seven are within the future capabilities of the Naval Weather Service. Officer and enlisted personnel will require additional training in the operation of ASWEPS activities.

Recommendations

1. It is recommended that the following billets be established in support of Subsystems Six and Seven of ASWEPS.

Shore-Based ASW Tactical Forecast/Display Unit

Officer in Charge (LCDR).....	1
Oceanographic Forecaster/Analyst (LT).....	8
ASW Officer (LT).....	1
Assistant for Administration (YN1).....	1
Oceanographic Technician (AG2 or AG3).....	4
*Computer Operator (AG2 or AG3).....	2
*Communications Personnel (RM2 or RM3).....	2
TOTAL	19

Sea-Based ASW Tactical Forecast/Display Unit

Oceanographic Forecaster/Analyst (LT).....	3
Oceanographic Technician (AG2 or AG3).....	9
TOTAL	12
GRAND TOTAL	31

2. Additional specialized training in ASWEPS procedures and techniques is recommended for personnel assigned to the Service Test. Officer personnel should receive, in addition to their

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more general educational preparation, a special course of instruction in ASWEPS operations. This course could be conducted at the Navy Hydrographic Office. It is further recommended that training for selected enlisted personnel be conducted at the U.S. Naval School, Aerographer's Mate, Lakehurst, New Jersey. This training course would also be attended by enlisted personnel assigned to Subsystems Three and Four.

*Augmentation personnel for weather facility.

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INTRODUCTION

PURPOSE

This systems analysis is designed to present a preliminary prediction of manpower requirements, billet duty descriptions, selection criteria, and training requirements for personnel who will supervise and operate Subsystem Six (Shore-Based ASW Tactical Forecast/Display Unit) and Subsystem Seven (Sea-Based ASW Tactical Forecast/Display Unit) of ASWEPS. The personnel information developed in this report is intended to provide source data required to assist the Chief of Naval Personnel, the Naval Weather Service, and Fleet Units in personnel management activities related to ASWEPS, such as: Establishment of personnel selection requirements, determination of training objectives and requirements, allocation of duties among billets and stations, establishment of training programs, and prediction of manpower requirements.

Three previous ASWEPS reports have been published. The first of this series was titled, "The Overall Scope of Personnel Research and Management Requirements of ASWEPS" and stated

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in general terms the personnel and training requirements of the entire system. The second of the series presented a detailed breakdown of personnel requirements in Subsystems One and Two (Regional Oceanographic Net and Mobile Oceanographic Net) and the third presented similar information for Subsystems Three and Four (Shore-Based Environmental Data Processing Unit and Sea-Based Environmental Data Processing Unit). The present Systems Analysis is limited to the requirements of Subsystems Six and Seven. A final comprehensive Systems Analysis will combine all preliminary findings into a master report.

This report is designed to forecast personnel and training requirements based on the best information presently available. It will be subject to change depending upon scientific and technological advances and/or changes in concept.

APPROACH

The data upon which this report is based has been gathered primarily from the U.S. Navy Hydrographic Office, the U.S. Naval Weather Service, the U.S. Naval Postgraduate School, the Bureau of Naval Personnel and from various applicable publications including the ASWEPS Technical Development Plan. Specific

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areas of information have not been necessarily limited to any one source and have sometimes been supplied by several sources, but the following categories of data have been principally supplied by the activities listed below:

- (1) Hydrographic Office - Technical features and objectives of Subsystems Six and Seven, duties to be performed and requisite technical background for personnel assigned.
- (2) Naval Weather Service - Organizational concepts and comparable numerical manpower requirements.
- (3) Naval Postgraduate School - Educational concepts for forecaster/analysts.
- (4) Bureau of Naval Personnel - Personnel selection criteria, training programs, and billet identification data.

SCOPE OF THIS REPORT

Part I of this report describes the purpose, function and organization of the Shore-Based ASW Tactical Forecast/Display Unit (Subsystem Six) and provides billet and duty descriptions for supervisors, forecaster/analysts, and enlisted assistants who will operate the unit. Recommended numerical manpower

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requirements by grade or rating/rate are stated, selection criteria are established and training programs are prescribed.

Part II of this report provides similar information on the Sea-Based ASW Tactical Forecast/Display Units (Subsystem Seven).

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PART I

SUBSYSTEM SIX

SHORE-BASED ASW TACTICAL FORECAST/DISPLAY UNIT

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GENERAL CHARACTERISTICS

FUNCTION:

The Shore-Based ASW Tactical Forecast/Display Unit will utilize data supplied by the Shore-Based Environmental Data Processing Unit and will be responsible for providing oceanographic analyses and forecasts and converting such data into tactical information applicable to weapon, surveillance, and vehicular systems. These predictions will cover a period of from one to five days and will be disseminated to appropriate commands by facsimile, coded radio message, messenger or personal briefing. Charted military predictions produced by this unit will include:

1. Probable ranges of shipboard, airborne, and shore-based sonar systems.
2. Optimum sonobuoy patterns and spacing.
3. Optimum EER depth.
4. Persistence of thermal wake.
5. Persistence of exhaust trails.
6. Optimum acquisition depths for homing torpedoes.

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7. Optimum ordnance firing depth.
8. Optimum convoy route (0-15 days in advance).

ORGANIZATION:

The exact organizational structure of the Shore-Based ASW Tactical Forecast/Display Unit has not yet been determined. In the absence of specific information, certain assumptions must be made based on available facts; for example:

1. Subsystem Six will be an integral part of a fleet weather facility.
2. Subsystem Six will share the maintenance, communications, and computer services of the fleet weather facility.
3. Subsystem Six will come under the direct supervision of the commanding officer of the fleet weather facility.

Ultimately, the data processing and tactical forecasting phases of ASNEPS will be phased into the Integrated Fleet Weather Central System. This will provide for more efficient operation, maintenance, training and assignment of personnel and will avoid duplication of effort.

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OPERATION:

The ASWEPS Technical Development Plan states that methods of analyzing synoptic oceanographic data will closely parallel standard procedures used by meteorologists. The practicability of automatic analyses has been established; adoption of such a procedure will be contingent upon the volume of data received and the number of transmissions required. Moderate developmental effort is required to develop analysis techniques for this phase of the operation. The number and type of synoptic analyses produced for distribution will vary with the requirements of the consumer.

A research program is being conducted to develop environmental prediction capability and operational forecasting techniques. Two basic approaches to prediction solution are being attempted simultaneously. One is aimed toward establishing quantitative relationships between meteorological and oceanographic regimes; the other treats the ocean statistically as a series of specialized regions. It is anticipated

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that prediction manuals and training aids will be developed once experimental forecasting techniques have obtained operational capability.

The system will require the service of an electronic digital computer for processing environmental and acoustic data, calculating environmental predictions and converting such predictions into operational parameters. No developmental problems are anticipated in acquiring a suitable computer; however, no model can be specified until the computer work load requirements are known. The possibility of utilizing present project computers in the Norfolk complex is being investigated.

The Shore-Based ASW Tactical Forecast/Display Unit will require twenty-four hour operation. A standard four-section watch, such as is used in weather facilities, will be utilized. Each section will consist of two forecaster/analysts and one enlisted oceanographic technician. Enlisted specialists from the Shore-Based Environmental Data Processing Unit (Subsystem Three) will be utilized in support of the Tactical Forecast/Display Unit. One ASW Officer will be assigned to Subsystem Six to assist

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in conversions of oceanographic forecasts to useable technical data. This officer will also provide staff guidance to the Officer in Charge in ASW matters. Subsystem Six will be headed by an Officer in Charge who will be under the commanding officer of the weather facility. One enlisted assistant is recommended for assignment to the OIC.

This report does not include job descriptions for communications, maintenance, or computer personnel. These personnel will be assigned to the weather facility and are not an integral part of the Forecast/Display Unit. In the listing of numerical manpower requirements which follows, provision is made for additional communications personnel and computer operators who may be required to absorb the additional work load imposed by Subsystem Six on the weather facility. Job descriptions cannot be included in this report since such personnel will not be assigned to Subsystem Six and will provide services for the entire weather facility to which they are assigned. Further, it is not anticipated that the portion of their work which is performed in support of Subsystem Six will differ significantly

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from their regularly assigned duties. Maintenance will be provided by commercial personnel according to present plans.

The following number of men are recommended for assignment to the Shore-Based ASW Tactical Forecast/Display Unit:

Officer in Charge (LCDR).....	1
Enlisted Assistant (YN1).....	1
Antisubmarine Warfare Officer (LT).....	1
Oceanographic Forecaster/Analysts (LT).....	8
Oceanographic Technicians (AG2 or AG3).....	<u>4</u>
TOTAL	15

The following number of men are recommended for assignment to augment the complement of the weather facility in order to absorb the additional work load imposed by ASWEPs:

Computer Operators (AG2 or AG3).....	2
Communications Personnel (RM2 or RM3).....	2

TRAINING:

The Air-Ocean Environment Curriculum of the U.S. Naval Postgraduate School, Monterey, California has been established to fulfill the educational requirements for oceanographic

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forecaster/analysts. This course is designed to provide a sufficiently broad scientific background for the officer so as to enable him to readily assimilate any new techniques which may be developed in the future. Selection criteria established is much the same as they for officers attending the Meteorological Curriculum at the Postgraduate School. The first year of the Air-Ocean Environment Curriculum is the same as that of the Meteorological Curriculum. It will be noted that the Air-Ocean Environment Curriculum will supply officers to fill other Navy billets besides those in ASNEPS. At the present time a plan is under discussion to assign first-year graduates of Air-Ocean Environment who are earmarked for ASNEPS to a short tour of duty at the Hydrographic Office after graduation to give them additional practical training. It is anticipated that such additional training will apply only to first or second year graduates and would be beneficial inasmuch as the program is in its early stages and little previous military experience is available in the field. All oceanographic forecaster/analysts should be graduates of the Air-Ocean Environment Curriculum.

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It is recommended that ASW Officers initially assigned to the system be given a specialized course of training at the Hydrographic Office. It is considered desirable that ultimately an increased program of training in ASWEPS conversions and operational applications will be included in the ASW Officer Course at the Fleet Sonar School.

No specific course of training is presently available for enlisted oceanographic specialists in Subsystem Six. The background of the Aerographer's Mate in meteorology should prove helpful in assimilating new techniques, but some further training in oceanographic techniques is indicated. It is recommended that a special training course be established for this purpose at the U.S. Naval School, Aerographer's Mate, Lakehurst, New Jersey, and that all assigned enlisted oceanographic specialists be graduates of this course. It will be noted that this course should encompass skills and techniques needed for all enlisted personnel in Subsystems Three, Four, Six, and Seven. Technical materials might be provided by the Hydrographic Office and the Naval Weather Service.

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BILLET AND DUTY DESCRIPTIONS

DUTY TITLE: Officer in Charge (OIC), Shore-Based Tactical Forecast/Display Subsystem

LOCATION: Fleet Weather Facility

RECOMMENDED GRADE: LCDR (1)

RECOMMENDED NOBC: 8725

DESCRIPTION OF DUTIES:

Maintains administrative and technical supervision over the oceanographic forecasting activity, including the Shore-Based Environmental Data Processing Subsystem (Subsystem Three). Assures the employment of all forecasting techniques and the scientific accuracy, quality, and quantity of the resulting forecasts. Responsible for the proper operation of the Data Processing Subsystem and implementation of data processing techniques. Reviews forecasts, charts, and other end products. Plans the detailed approach to assigned special forecasting projects. Conducts liaison with operational activities on forecasting requirements, problems, or projects.

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RECOMMENDED QUALIFICATIONS AND TRAINING:

1. Qualifications: Previous command or administrative experience is desirable. Scientific background, academic or practical, is desirable. Knowledge of data processing and computer operations is desirable.

2. Training: The incumbent should be a graduate of the Air-Ocean Environment curriculum of the U.S. Navy Postgraduate School. In addition, he should receive on-the-job training at the Navy Hydrographic Office in the operation and management of an oceangraphic prediction unit.

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DUTY TITLE: ASW Officer

LOCATION: Fleet Weather Facility

RECOMMENDED GRADE: LT (1)

RECOMMENDED NOBC: 9040

DESCRIPTION OF DUTIES:

Monitors the program of routine computer conversion of ASWEPS data into operational information and assures maintenance of quality control. Assists in application of conversion techniques to ASWEPS data for special projects as assigned. Provides staff guidance to the OIC and the forecasting staff in ASW matters. (Depending on the ultimate organizational structures of the system, this officer might also formulate instructions for use of ASWEPS data to be disseminated to fleet users.)

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. **Qualifications:** None other than those implicit in the recommended NOBC.

2. **Training:** It is recommended that ASW Officer (s) initially assigned to the system be given a specialized course of training in ASWEPS conversions and operational applications at the Hydrographic Office.

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DUTY TITLE: Oceanographic Forecaster/Analyst

LOCATION: Fleet Weather Facility

RECOMMENDED GRADE: LT (8)

RECOMMENDED NOBC: 8720

DESCRIPTION OF DUTIES:

Prepares oceanographic forecasts and synoptic analyses in support of military operations through detailed analysis of oceanographic and meteorological information and application of appropriate forecasting methods and techniques. Converts surface and subsurface environmental data to tactical information for application to military operations. Utilizes tables, charts, graphs, and/or computer techniques to obtain tactical conversions.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. **Qualifications:** The incumbent should possess a background in science and mathematics, either academic or practical. Previous experience as an ASW Officer is desirable. Other qualifications will be determined by the Postgraduate School selection board.
2. **Training:** The oceanographic forecaster/analyst should be a graduate of the Air-Ocean Environment curriculum of the U.S.

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Navy Postgraduate School. In addition, he should receive on-the-job training in the Navy Hydrographic Office in the practical application of oceanographic analyses and forecasting techniques.

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DUTY TITLE: Enlisted Administrative Assistant

LOCATION: Fleet Weather Facility

RECOMMENDED RATING/RATE: YN1 (1)

ALTERNATE RECOMMENDED RATING/RATE: AG1

RECOMMENDED NEC: 2511

DESCRIPTION OF DUTIES:

Assists OIC in routine administrative duties. Files, types and performs other office duties such as the preparation of duty rosters. Screens incoming correspondence. Requisitions, maintains, and posts changes to publications. Requisitions, stows, and issues supplies. Receives office visitors and handles telephone communications.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. **Qualifications:** Previous experience in the U.S. Navy Weather Service is desirable.
2. **Training:** Should be a graduate of U.S. Naval School, Yeoman, Class B.

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DUTY TITLE: Oceanographic Technician

LOCATION: Fleet Weather Facility

RECOMMENDED RATING/RATE: AG2 or AG3 (4)

DESCRIPTION OF DUTIES:

Obtains prepared oceanographic data from the Shore-Based Environmental Data Processing Unit and submits it to the facility computer unit and/or to the duty forecaster/analyst. Assists the forecaster/analyst in routine portions of forecast preparation. Prepares charts, briefing aids, messages, and displays as required.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. Qualifications: The Oceanographic Technician should possess a broad background in practical meteorological experience which will enable him to readily assimilate new techniques and skills required in the field of oceanography.

2. Training: The incumbent should attend a special course to be established for all enlisted personnel of the Forecast/Display Units.

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PART II

SUBSYSTEM SEVEN

SEA-BASED ASW TACTICAL FORECAST/DISPLAY UNITS

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GENERAL CHARACTERISTICS

FUNCTION:

The Sea-Based ASW Tactical Forecast/Display Subsystem provides operational ASW forecasts similar to those prepared ashore. These forecasts differ in that they show in great detail, conditions expected during the next 48 hours within only the potential operating area of the Hunter-Killer Groups or the convoy. Environmental data is obtained from the Sea-Based Environmental Data Processing Subsystem (Subsystem Four). Much of the subsystem's output will be utilized by VS and HS units operating from the aircraft carriers on which the subsystem will be located. Briefing displays should therefore be available in ready rooms and in Flag Plot, CIC, and other locations to be determined. The feasibility of closed circuit television displays is under consideration. Briefing aids will be developed and standardized by the Lead Bureau.

Military prediction, 0-48 hours in advance will include the following:

1. Probable ranges of airborne and shipboard sonars.
2. Optimum sonobuoy patterns and spacing.
3. Optimum EER explosion depth.

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4. Persistence of thermal wakes.
5. Persistence of exhaust trails.
6. Optimum acquisition depth for homing torpedoes.
7. Optimum firing depth for ordnance.

Charts will be provided for ASW commands aboard HUK components and messages to ASW commands and other units of HUK or escort groups.

ORGANIZATION:

This subsystem will be established in the carriers (CVS) of three Task Groups. Subsystem Number Seven is closely allied with Subsystems Numbers Two and Four, providing the types of data and end products specifically applicable to the immediate operating area and tactical problems of the Task Group. Close physical proximity of Subsystems Numbers Four and Seven is mandatory to ensure functional continuity. The close relationship between the Meteorological Office and Subsystems Four and Seven gives rise to a suggestion in the TDP that a feasibility study is appropriate to determine if their shipboard spaces could be combined. Relocation of the Meteorological Office aboard the CVS's as part of a combined forecasting central will be considered.

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It is recommended that the Tactical ASW Forecast/Display Unit aboard each CVS be organized into a standard three section watch for 24-hour operation. One enlisted oceanographic technician would stand each section of the watch and would be under the control of an Oceanographic Forecaster/Analyst. The enlisted oceanographic technician obtains prepared data from Subsystem Four, submits the data to a computer for routine forecasting, and prepares routine charts and messages for dissemination.

One Oceanographic Forecaster/Analyst is recommended for assignment to each CVS participating. The Oceanographic Forecaster/Analyst will prepare special forecasts as required; oversee routine computer forecasting to ensure quality and quantity control; and exercise overall supervision over personnel and operations in the Sea-Based Tactical ASW Forecast/Display Units.

OPERATIONS:

The following synopsis of the technical approach to analysis and forecasting is extracted from the ASW Technical Development Plan:

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"Whenever possible, analytical techniques will parallel those of meteorologists and templates of weather charts used. Every attempt will be made to standardize techniques and format to achieve speed without sacrificing accuracy. A considerable developmental effort is necessary in order to determine how best to tailor outputs to specific and changing requirements. Since Subsystem Seven will operate round-the-clock, forecasting on a non-scheduled basis and depending entirely on manual analysis, methodology must be streamlined to an extent not required by Subsystems Numbers Five and Six. Forecast techniques will be developed by the Technical Agency (Hydrographic Office) or its contractor. Preparation of computer programs, training aids, and forecaster's manuals will be included. The developmental program will run concurrently with that of Subsystem Six, many features being shared."

It will be noted that many aspects of Subsystem Seven are still in a relatively early developmental state. It has not been possible for the lead bureau to render technical decisions in certain areas, and in order to prepare this report at this

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time it has been found necessary to make certain assumptions based on the best information available. The assumptions are as follows:

1. ASW Tactical Forecast/Display Units will provide both routine and special forecasts. Routine forecasts will be made by computer with pre-set programs, and will be monitored by an enlisted oceanographic technician on watch. Special forecasts will be prepared by the forecaster/analyst assisted by the oceanographic technician.

2. Two alternatives appear feasible for computer utilization aboard carriers:

- a. Programming ASWEPS data through the Navy Tactical Data System (NTDS) to be installed aboard carriers.

- b. Installing a desk-type computer for exclusive ASWEPS use.

Of these alternatives, it appears at this time that use of NTDS might be the more practicable. It will be assumed, therefore, that ASWEPS computer operations in Subsystem Seven will be programmed on NTDS computers. Computer operators, maintenance

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personnel and communications personnel will not be accounted for in this report since they will not be under the aegis of Subsystem Seven. (Communications and maintenance services should be provided by ship's force in any case.) In the event that alternative "b" is implemented, rather than alternative "a", then some computer training in whatever type of equipment is selected, will have to be added to the training program for enlisted oceanographic technicians. There are small computers presently available, and of a type apparently compatible with ASWEPS requirements, which according to their manufacturers, can be successfully operated by a novice with a minimum of formal training.

3. The role of the ASW Officer as part of the CVS forecast central office has not yet been clearly defined. Conversion techniques (i.e., the changing of forecast into usable tactical data) are still under development and much of the role of the ASW Officer in this context must necessarily be dependent upon what progress is made in conversion techniques. Again, two general alternative situations emerge:

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a. If proper techniques can be developed, it might be possible to integrate conversion factors with forecasting factors in the computer program so as to yield results in a usable tactical form not requiring further conversions. If this be the case, then the ASW Officer might be needed only to provide occasional staff guidance.

b. If techniques such as those described in "a" above cannot be attained, then the services of an ASW Officer on a regular basis might be required to work-out, or supervise, conversions made in some less sophisticated manner.

Alternate "a", if adopted, might only require the services of the regularly assigned ASW Officer aboard the CVS who would lend whatever assistance might be necessary on a part-time basis. Alternative "b" suggests the need for a full-time ASW Officer assigned primarily to the forecasting office aboard the CVS to assist in conversions. Although alternative "a" seems the more likely, it is not possible to make a valid

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determination at this time. A brief duty description for an ASW Officer is included in this report covering such factors as are known. The duty description could serve as a guide either to the part-time duties implicit in alternative "a" or the full-time duties of "b".

The following number of men are recommended for assignment to the Sea-Based ASW Tactical Forecast/Display Units:

	Per CVS	Total
Forecaster/Analyst (LT).....	1	3
Oceanographic Technician (AG1 or AG2)....	3	9
*ASW Officer (LT).....	<u>1</u>	<u>3</u>
Totals:	5	15

*To be determined

Recommended personnel levels have been determined by comparing manpower needs to meteorological divisions and duties of civilian oceanographers who have been assigned to previous ASW exercises.

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TRAINING:

Oceanographic Forecaster/Analysts should be graduates of the Air-Ocean Environment Course at the U.S. Navy Postgraduate School.

Training for enlisted oceanographic technicians should be the same as for Subsystem Number Six, discussed previously. Computer training may have to be added depending on technical and command decisions.

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BILLET AND DUTY DESCRIPTIONS

DUTY TITLE: Oceanographic Forecaster/Analyst

LOCATION: Sea-Based ASW Tactical Forecast/Display Units
aboard CVS

RECOMMENDED GRADE: LT (3)

RECOMMENDED NOBC: 8715

DESCRIPTION OF DUTIES:

Maintains administrative and technical supervision over the oceanographic forecasting and data processing activities aboard the carrier. Prepares oceanographic forecasts and synoptic analyses in support of military operations through detailed analysis of oceanographic and meteorological information and application of appropriate forecasting methods and techniques.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. Qualifications: Should possess a background in science and mathematics, either academic or practical. Previous experience as an ASW Officer is desirable. Other qualifications will be established by the Postgraduate School selection board.

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2. Training: The Oceanographic Forecaster/Analyst should be a graduate of the Naval Postgraduate School, Air-Ocean Environment Curriculum. In addition, he should receive on-the-job training at the Navy Hydrographic Office in the practical application of oceanographic analyses and forecasting techniques.

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DUTY TITLE: ASW Officer

LOCATION: CVS

RECOMMENDED GRADE: LT (3)

DESCRIPTION OF DUTIES:

Monitors the program of routine computer conversions of ASWEPS data into operation information and assures maintenance of quality control. Assists in application of conversion techniques to ASWEPS data for special projects as assigned. This billet may constitute part-time duty for the Carrier ASW Officer depending on development of conversion techniques.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. Qualifications: None other than those implicit in the duty title and grade.

2. Training: It is recommended that ASW Officer(s) initially assigned to the system be given a specialized course of training in ASWEPS conversions and operational applications at the Hydrographic Office.

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DUTY TITLE: Oceanographic Technician

LOCATION: Sea-Based ASW Tactical Forecast/Display Units
aboard CVS

RECOMMENDED RATING/RATE: AG2 or AG3 (9)

DESCRIPTION OF DUTIES:

Assists the Oceanographic Forecaster/Analyst in the operation of the Sea-Based ASW Tactical Forecast/Display Unit. Obtains prepared data from the Sea-Based Environmental Data Processing Unit and submits it to the forecaster/analyst and/or to a computer. If a desk-type computer, rather than NTDS computer, is used the oceanographic technician will feed the data into the computer and operate it. Prepares charts, briefing aids, messages and displays as required. Assists the forecaster/analyst in routine operations of special forecasts.

RECOMMENDED QUALIFICATIONS AND TRAINING:

1. **Qualifications:** The Oceanographic Technician should have a broad background in practical meteorological experience which will enable him to readily assimilate new techniques and skills required in the field of oceanography.

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2. Training: The incumbent should attend a special course to be established for all enlisted personnel of the Forecast/Display and Data Processing Units. Computer operation may be added as required.

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APPENDIX

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BUPERS (Pers-A12)
BUPERS (Pers-A2)
BUPERS (Pers-A3)
BUPERS (Pers-A3121)
BUPERS (Pers-B1)
BUPERS (Pers-B1bc)
BUPERS (Pers-B2)
BUPERS (Pers-B211)
BUPERS (Pers-B2132)
BUPERS (Pers-C1)
BUPERS (Pers-C111)
BUPERS (Pers-C1229)
BUPERS (Pers-C23)
BUPERS (Pers-C253)
BUPERS (Pers-10)
BUPERS (Pers-151)
BUPERS (Pers-152)

CNO (OP-01P1)
CNO (OP-03T)
CNO (OP-06C1)
CNO (OP-07T)
CNO (OP-07T14)
CNO (OP-09B5) (10)
CNO (OP-09B7) (2)
CNO (OP-30)
CNO (OP-32)
CNO (OP-33)
CNO (OP-71)
CNO (OP-93E)
CNO (OP-941P)

ONR (Code 416)
ONR (Code 466)

BUSHIPS (Code 370)
BUSHIPS (Code 689B)

BUWEPs (Code CS)
BUWEPs (Code CU)
BUWEPs (Code FWWS)
BUWEPs (Code RU)

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